

OPERATIONS MANUAL

Red Rock Disposal, LLC
Holly Springs, North Carolina
NC Solid Waste Permit No. 92-28

Prepared for:



Red Rock Disposal, LLC
(a Waste Industries Company)
Raleigh, North Carolina

November 2015

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577



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NC Solid Waste Permit No. 92-28

Red Rock Disposal, LLC
Holly Springs, North Carolina

Prepared For:



Waste Industries USA, Inc.
Raleigh, North Carolina

S+G Project No. Red Rock 13-2

DocuSigned by:

Spencer Hollomon

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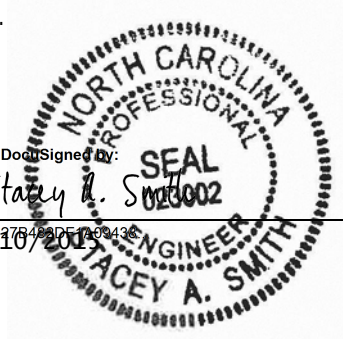
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November 2015

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Operations Manual

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1.0 GENERAL FACILITY OPERATION

1.1 OVERVIEW

This Operations Manual was prepared for operations of the Red Rock Disposal, LLC (Permit No. 92-28) located in Holly Springs, NC as shown in **Figure 1**. This document discusses the operation of the following landfill units and other solid waste management activities:

- C&D landfill;
- Scales and scale house.

Refer to **Figure 2** for the location of existing and proposed landfill units and other solid waste management activities.

The information contained herein was prepared to provide landfill personnel with a clear understanding of how the Design Engineer assumed that the completed facility would be operated. While deviations from the operations outlined here may be acceptable, they should be reviewed and approved by the Design Engineer. Please refer to the appropriate permit application for a detailed discussion and calculations for the individual components of each landfill unit, including phasing plans.

1.2 CONTACT INFORMATION

All correspondence and questions concerning the operation of the South Wake MSW Landfill should be directed to the appropriate Owner, Operator and State personnel listed below. For fire or police emergencies dial 911. The Red Rock Landfill, LLC is a wholly owned subsidiary of Waste Industries USA, Inc.

1.2.1 Red Rock Disposal, LLC

7130 New Landfill Drive
Holly Springs, North Carolina 27540
Phone (919) 557-9583
Fax: (919) 557-9523
Branch Manager: Don Plessinger
don.plessinger@wasteindustries.com

1.2.2 Waste Industries USA, Inc.

3301 Benson Drive, Suite 600
Raleigh, North Carolina 27609

Waste Industries
Area Manager: David Pepper
Email: david.pepper@wasteindustries.com
Phone: (919)877-2235

1.3 NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

North Carolina DENR - Raleigh Central Office (RCO)
217 West Jones Street
1646 Mail Service Center
Raleigh, North Carolina 27699-1646
Phone: (919) 707-8200
Fax: (919) 707-8200

North Carolina DENR – Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, North Carolina 27107
Phone: (336) 771-5000
Fax: (336) 771-4630

Division of Waste Management (DWM) - Solid Waste Section:

Field Operations Branch Head: Mark Poindexter (RCO)
Email: mark.poindexter@ncdenr.gov
Western District Supervisor: Jason Watkins (WSRO)
Email: jason.watkins@ncdenr.gov
Environmental Senior Specialist: Shawn McKee (RCO)
Email: shawn.mckee@ncdenr.gov

1.4 WAKE COUNTY:

Wake County Department of Water Quality
Post Office Box 550
Raleigh, North Carolina 27602
Phone: (919) 868-6414

Watershed Manager: Betsey Pearce, CFM, CPSWQ
Email: betsy.pearce@wakegov.com

1.5 FACILITY OPERATING HOURS

Normal hours of operation will be 7:00 A.M. to 4:00 P.M. Monday through Friday and occasionally on Saturdays as needed. The facility will be closed on holidays as designated by the Owner. The Owner may elect to modify these hours from time to time.

1.6 ACCESS CONTROL

Limiting access to the landfill facility is important for the following reasons:

- Unauthorized and illegal dumping of waste materials is prevented.
- Trespassing, and injury resulting therefrom, is discouraged.
- The risk of vandalism is greatly reduced.

Access to active areas of the landfill will be controlled by a combination of fences and natural barriers, and strictly enforced operating hours through the landfill entrance off of New Landfill Road. A scalehouse attendant will be on duty at all times when the landfill facility is open for public use to enforce access restrictions (see also **Section 1.4**).

1.6.1 Physical Restraints

The site will be accessed by the existing entrance off of Rex Road. Scales and a scale house will be provided near the C&D landfill along New Landfill Drive on the landfill property. All waste will have been weighed prior to being placed in the landfill. The entrance along New Landfill Drive has a gate which will be securely locked during non-operating hours.

1.2.3 Security

Frequent inspections of gates and fences will be performed by landfill personnel. Evidence of trespassing, vandalism, or illegal operation will be reported to the Owner.

1.7 SIGNAGE

A prominent sign(s) containing the information required by the DWM will be placed at the main landfill entrance. This sign(s) will provide information on operating hours, operating procedures, acceptable wastes and/or information as required under the facility permit. Additional signage will be provided as necessary within the landfill complex to distinctly distinguish the roadway to the active landfill phase(s). Service and maintenance roads for use by operations personnel will be clearly marked and barriers (e.g., traffic cones, barrels, etc.) will be provided as required.

1.8 COMMUNICATIONS

Two way radio communications will be maintained between the landfill operations, the landfill manager (Operator) and the scale house and office (Owner). The scale house and site offices have telephones in case of emergency and for the conduct of day-to-day business. Emergency telephone numbers are displayed in these locations. Cellular phones are available for key operating staff (i.e. managers, operators).

1.9 FIRE CONTROL

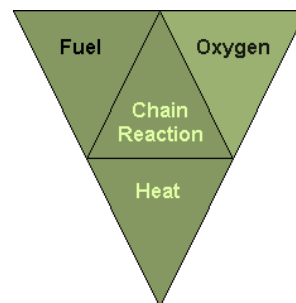
Although no open burning of waste is allowed at the facility, the possibility of fire within the landfill or a piece of equipment must be anticipated in the daily operation of the landfill. Potential fire hazards include both surface conditions and subsurface conditions. Surface conditions include equipment operations and newly placed waste. Subsurface conditions include existing waste previously landfilled.

1.10 OPEN BURNING

With the exception of the controlled burning of land clearing debris generated on-site or from emergency clean-up operations, no opening burning is allowed at the facility. Controlled burning will occur only if permitted or approval by the local Fire Marshall.

1.10.1 Fire Tetrahedron¹

To better understand the properties of fire we can examine the fundamental methods to extinguish it. The fire “tetrahedron” illustrates the rule that in order to ignite and burn, each component represents a property of flaming fire; fuel, oxygen, heat, and chemical chain reaction. A fire is prevented or extinguished by removing any one of them. A fire naturally occurs when the elements are combined in the right mixture (e.g., more heat needed for igniting some fuels, unless there is concentrated oxygen). The fire tetrahedron is a more modern adaptation of the traditional fire “triangle” recognizing the chemical reactions that may occur as a component – “the uninhibited chain reaction”. This chain reaction is the feedback of heat to the fuel to produce the gaseous fuel used in the flame. In other words, the chain reaction provides the heat necessary to maintain the fire. These principles are integral in the prevention and management of potential fire situations. *Please note this information is considered as a basis of understanding and may not be replaced by the direction and skill of the local Fire Marshall.*



¹ National Fire Protection Association (www.nfpa.org)

1.10.2 Equipment

A combination of factory installed fire suppression systems and/or portable fire extinguishers will be operational on all pieces of heavy equipment at all times. Potential fire hazards are created from the build-up of fine, dry dust particles on and around operational motors and control panels. The presence of these build-ups can cause overheating and potential fire if periodic equipment cleaning and maintenance are not practiced. Portable fire extinguishers should be maintained in a state of readiness on each piece of moving equipment and equipment should be cleaned periodically.

1.10.3 General Fire Management Strategies

Each fire situation is site specific; however, general strategies for active fire management include the following (in no particular order):

- Accelerated high temperature combustion (displacing fuel);
- Covering of the landfill burn area with soil (reduce oxygen);
- Covering of the burn area with foams (reduce oxygen);
- Flooding the burn area with water (reduce heat);
- Injecting an inert gas such as CO₂ (reduce oxygen);
- Excavating the burning material (displacing fuel) and then extinguishing it in small controlled areas; and
- Break the chemical reaction.

1.10.4 Fires Within Disposal Areas

Fires within the landfill disposal areas will be limited by the use of daily/periodic cover as a fire break and control of "hot" loads entering the landfill. Trained personnel at the scale house will turn away all trucks containing waste that is suspected to be hot. If a hot load is placed on the working face, then the load will be spread as thin as possible and daily cover soil will be immediately placed on the waste to extinguish the fire.

In general, fires that break out close to the surface of the disposal area should be excavated and smothered with cover material. Deep fires should be smothered out by placing moist soil on the surface and by constructing soil barriers around the fire. Where the smothering technique fails, the burning material must be excavated and smothered or quenched with water once the burning material is brought to the surface. Water is usually not effective unless it can be directly applied to the burning material.

In the event a fire occurs in the first lift of waste immediately above the protective cover layer, the possibility of damage to geosynthetics and collection

piping exists. Once the fire is extinguished, the residue must be removed to allow limited inspection of the geosynthetics and piping. Damaged sections of geosynthetics, piping, etc. must be removed and replaced with new items of the same or equal material. The new materials must be placed in accordance with the technical specifications and construction quality assurance (CQA) documents prepared for this facility.

1.10.5 Notification

The County will verbally notify the DWM (see **Section 1.3**) within 24 hours of discovery of a fire within any landfill disposal area. In addition, written documentation describing the fire, the actions carried out to extinguish the fire, and a strategy for preventing future occurrences will be provided to the DWM within 15 days following any such occurrence on the **Fire Occurrence Notification Form** included in **Appendix A**.

1.10.6 Coordination With Local Fire Department

A copy of this Operations Manual will be filed with the local fire department including all contact information for the facility.

1.11 **LITTER CONTROL**

The vegetative trees/brushes act as a barrier to keep litter contained within the site and a litter control crew will pick up litter around the site and on access roads routinely as required.

1.12 **SEVERE WEATHER CONDITIONS**

Unusual weather conditions can directly affect the operation of the landfill facility. Some of these weather conditions and recommended operational responses are as follows.

1.12.1 Ice Storms

An ice storm can make access to the landfill dangerous, prevent movement or placement of daily cover, and, thus, may require closure of the landfill until the ice is removed or has melted.

1.12.2 Heavy Rains

Exposed soil surfaces can create a muddy situation in some portions of the landfill during rainy periods. The control of drainage and use of crushed stone on unpaved roads should provide all-weather access for the site and promote

drainage away from critical areas. In areas where the aggregate surface is washed away or otherwise damaged, new aggregate should be used for repair.

Intense rains can affect newly constructed drainage structures such as swales, diversions, cover soils, and vegetation. After such a rain event, inspection by landfill personnel will be initiated and corrective measures taken to repair any damage found before the next rainfall.

1.12.3 Electrical Storms

The open area of a landfill is susceptible to the hazards of an electrical storm. If necessary, landfilling activities will be temporarily suspended during such an event. Refuge will be taken as necessary in the on-site buildings or in rubber-tired vehicles.

1.12.4 Windy Conditions

Landfill operations during a particularly windy period may require that the working face be temporarily shifted to a more sheltered area. When this is done, the previously exposed face will be immediately covered with daily cover.

1.12.5 Violent Storms

In the event of hurricane, tornado, or severe winter storm warning issued by the National Weather Service, landfill operations may be temporarily suspended until the warning is lifted. Daily cover will be placed on exposed waste and buildings and equipment will be properly secured. A radio capable of tuning to NOAA Weather Radio-Providence shall be periodically monitored by landfill personnel.

1.13 **EQUIPMENT REQUIREMENTS**

The Operator will maintain on-site equipment required to perform the necessary landfill activities. Periodic maintenance of all landfilling equipment and minor and major repair work will be performed at designated maintenance zones.

The anticipated equipment requirements for operation and maintenance of the site are listed in the following table. These may vary based upon volume coming into the landfill for disposal.

Table 1: Equipment Requirements

Description	Primary Function (Allocation)
1) Compactors (1)	Waste placement and compaction
2) Dozers (1)	Stripping and grading of borrow areas, fine grading, slope work, and site cleanup
3) Small Excavator (1)	General site work, sediment control, and site cleanup.
4) Water Truck (1)	Dust control
5) Large Excavator (1)	Loading and placement of cover soils
6) Off Road Dump Truck (1)	Loading and hauling of cover soils
7) Service Truck	Equipment maintenance and site management
8) Other Equipment	As needed.

1.14 PERSONNEL REQUIREMENTS

At least one member of the landfill supervisory staff will be certified as a Manager of Landfill Operations (MOLO) by the Solid Waste Association of North America (SWANA). Each landfill employee will go through an annual training course (led by supervisory staff) and is certified by SWANA as Landfill Operations personnel. As part of this training, personnel learn to recognize loads which may contain prohibited wastes.

The anticipated personnel requirements for operation and maintenance of the site are listed in the following table. The numbers of site personnel can be adjusted based upon volume of waste received for disposal.

Table 2: Personnel Requirements

Description	Primary Function (Allocation)
1) Site Manager (1)	Overall management of the facility
2) Operations Manager (1)	Manage facility operations
3) Scalehouse Attendant (1)	Receiving and weight for incoming loads
4) Operators (2)	Management of workplace, leachate systems, cover placement
5) Temp Labor (4)	General labor and operational staff around the site

1.15 HEALTH AND SAFETY

All aspects of the landfill facility operations were developed with the health and safety of the operating staff, customers, and neighbors in mind. Prior to commencement of operations of the facility, a member of the operating staff will be designated site safety officer. This individual, together with the facility's management will modify the site

safety and emergency response program to remain consistent with SWANA and Occupational Safety and Health Administration (OSHA) guidance.

Safety equipment provided includes equipment rollover protective cabs, seat belts, audible reverse warning devices, hard hats, safety shoes, and first aid kits. Facility personnel will be encouraged to complete the American Red Cross Basic First Aid Course. Other safety requirements as designated by the Owner and Operator will also be implemented.

Facility employees will be routinely trained in health and safety by supervisory staff. All training will be documented. The following are some general recommendations for the health and safety of workers:

1.15.1 Personal Hygiene

The following items are recommended as a minimum of practice:

- Wash hands before eating, drinking, or smoking.
- Wear personal protective equipment as described in **Section 1.14.2**.
- Wash, disinfect, and bandage ANY cut, no matter how small it is. Any break in the skin can become a source of infection.
- Keep fingernails closely trimmed and clean (dirty nails can harbor pathogens).

1.15.2 Personal Protective Equipment

Personal Protective Equipment (PPE) must be evaluated as to the level of protection necessary for particular operating conditions and then made available to facility employees. The list below includes the PPE typically used and/or required in a solid waste management facility workplace.

- Safety shoes with steel toes.
- Noise reduction protection should be used in areas where extended exposures to continuous high decibel levels are expected.
- Disposable rubber latex or chemical resistant gloves for handling and/or sampling of waste materials.
- Dust filter masks.
- Hard hats (in designated areas).

Following use, PPEs= should be disposed of or adequately cleaned, dried, or readied for reuse.

1.15.3 Mechanical Equipment Hazard Prevention

All equipment should be operated with care and caution. All safety equipment such as horns, backup alarms, and lights should be functional. A Lockout-Tagout program will be used to identify equipment in need or under repair and insure that operation is Aoff-limits@ prior to maintenance or repair. All operators will be trained in the proper operation of equipment.

1.15.4 Employee Health and Safety

Some general safety rules are:

- Consider safety first when planning and conducting activities.
- Review the equipment O&M manual(s) prior to attempting repairs/changes.
- Remember the buddy system for repair of mechanical equipment.
- Post emergency contact phone numbers.
- Provide easy and visible access to the Right to Know materials.
- Provide easy and visible access to first aid kits and fire extinguishers.

1.15.5 Physical Exposure

Facility personnel may come in contact with the fluids, solids, and airborne constituents found at the facility. Routine training should be conducted regarding the individual and collective materials used at the facility and their associated hazards. Training concerning safe work practices around these potential exposures should cover the use of equipment and proper disposal procedures.

1.15.6 Material Safety Data Sheets

Material Safety Data Sheets (MSDS) will be collected on every waste (if available) that enters the facility. Information will also be made available for all chemicals stored on site for use at the facility. MSDS sheets will be stored in a location with all other Right to Know information for the site.

1.16 UTILITIES

Electrical power, water, telephone, and restrooms will be provided at the scale house and the site offices.

1.17 **RECORD KEEPING PROGRAM**

The Operator will maintain the following records in an operating record at the landfill:

- A. Current permit(s) (Permit to Construct, Permit to Operate, etc.);
- B. Current operations manual/plan and engineering plan;
- C. Inspection reports;
- D. Audit and compliance records;
- E. Annual landfill reports (including survey and other documentation related to airspace usage);
- F. Waste inspection records (see **Section 2.4.1**);
- G. Daily tonnage records and disposal records maintained at the scalehouse - including source of generation;
- H. Waste determination records;
- I. Quantity, location of disposal, generator, and special handling procedures for all special wastes disposed of at the site (if applicable);
- J. List of generators and haulers that have attempted to dispose of restricted wastes;
- K. Employee training procedures and records of training completed;
- L. All ground water monitoring and surface water quality information (See the current **Water Quality Monitoring Plan**) including:
 - 1. Monitoring well construction records;
 - 2. Sampling dates and results;
 - 3. Statistical analyses; and
 - 4. Results of inspections, repairs, etc.
- M. LFG monitoring results and remedial measures as required (see the current **LFG Monitoring Plan**);
- N. All closure and post-closure information, where applicable, including:
 - 1. Notification of intent to close;
 - 2. Testing;
 - 3. Certification; and
 - 4. Recording.
- O. Cost estimates or financial assurance documentation;
- P. A notation of the date and time of cover placement;

The operating record will be kept up to date by the Owner or his designee. It will be presented upon request to the DWM for inspection. A copy of this Operations Manual will be kept at the landfill and will be available for use at all times.

2.0 WASTE HANDLING OPERATIONS

2.1 OVERVIEW

This section describes the required waste handling operations for the Red Rock Disposal C&D Landfill.

2.2 ACCEPTABLE WASTE

The Red Rock Disposal C&D Landfill will only accept waste that is generated from the approved service areas as shown in **Figure 3**, is consistent with the North Carolina solid waste regulations and the general conditions established in the operating permit. The acceptance of waste materials must satisfy the following definitions:

- Construction and Demolition Debris Waste: as defined in G.S. 130A-290 (a)(4) means solid waste resulting solely from construction, remodeling, repair or demolition operations on pavement, buildings, or other structures, but does not include inert debris, land-clearing debris or yard waste
- Inert Debris Waste: as defined in G.S. 130A-290 (a)(14) means solid waste that consists solely of materials such as concrete, brick, concrete block, uncontaminated soil, rock, and gravel.
- Land Clearing and Inert Debris Waste: as defined in G.S. 130A-290 (a)(15) means solid waste that is generated solely from land-clearing activities, such as stumps and tree trunks.
- Asphalt: in accordance with G.S. 130-294 (m).
- Other Waste: other solid waste as approved by the Solid Waste Section of the Division of Waste Management.

In addition, the special wastes described in **Section 2.5.3** may also be accepted at this facility.

2.3 PROHIBITED WASTES

No municipal solid waste (MSW), hazardous waste as defined by 15A NCAC 13A including hazardous waste from conditionally exempt small quantity generators), or liquid waste will be accepted at this facility. In addition, no polychlorinated biphenyl (PCB) waste will be accepted. Red Rock Disposal will implement a waste screening program described in **Section 2.4**, to prohibit these types of waste.

Asbestos waste may be accepted by the facility if handled according to **Section 2.5.3.1**.

2.4 WASTE SCREENING PROGRAMS

In order to assure that prohibited wastes are not entering the landfill facility, screening programs have been implemented. Waste received at both the scale house entrance and waste taken to the working face is inspected by trained personnel. These individuals have been trained to spot indications of suspicious wastes, including: hazardous placarding or markings, liquids, powders or dusts, sludges, bright or unusual colors, drums or commercial size containers, and "chemical" odors. Screening programs for visual and olfactory characteristics of prohibited wastes are an ongoing part of the landfill operation.

2.4.1 Waste Receiving and Inspection

All vehicles must stop at the scale house located near the entrance of the facility and visitors are required to sign-in. All waste transportation vehicles are weighed and the content of the load assessed. The scale attendant(s) requests from the driver of the vehicle a description of the waste it is carrying to ensure that unacceptable waste is not allowed into the landfill. The attendant(s) then visually checks the vehicle as it crosses the scale. Signs informing users of the acceptable and unacceptable types of waste are posted at the scale house or in the vicinity of the entrance to the site. Once passing the scales, the vehicles containing C&D wastes are routed to the landfill.

Vehicles are selected for screening at random a minimum of three times per quarter (i.e. three months). Selected vehicles are directed to an area of intermediate cover adjacent to the working face where the vehicle will be unloaded. Waste is carefully spread using suitable equipment. An attendant trained to identify wastes that are unacceptable at the landfill inspects the waste discharged at the screening site. If unacceptable waste is found, the load will be isolated and secured by berming off the area. Unacceptable wastes that are non-hazardous will be removed from the C&D area and removed from the facility. All random waste inspections will be documented by landfill staff using the waste screening form provided in **Appendix B**.

For unacceptable wastes that are hazardous, the Hazardous Waste Contingency Plan outlined in **Section 2.4.2** will be followed. To determine the liquid content of the waste, a liquid determination will be performed by the paint filter test (see **Appendix C** for apparatus and procedures). The hauler is responsible for removing unacceptable waste from the landfill property. If no unacceptable waste is found, the load will be pushed to the working face and incorporated into the daily waste cell.

2.4.2 Hazardous Waste Contingency Plan

In the event that identifiable hazardous waste or waste of questionable character is detected at the landfill, appropriate equipment, protective equipment, personnel, and materials as necessary will be employed to isolate the wastes. DWM will be notified immediately (see **Section 1.3**) that an attempt was made to dispose of hazardous waste at the landfill. If the vehicle attempting disposal of such waste is known, all attempts will be made to prevent that vehicle from leaving the site or, if the vehicle has left the site, immediate notice will be served on the owner of the vehicle that hazardous waste, for which they have responsibility, has been disposed of at the landfill.

The landfill will assist DWM as necessary and appropriate in the removal and disposition of the hazardous waste and in the prosecution of responsible parties. If needed, the hazardous waste will be covered with either on-site soils or other tarping material until such time when an appropriate method can be implemented to properly handle the waste. The cost of the removal and disposing of the hazardous waste will be charged to the owner of the vehicle involved. Any vehicle owner or operator who knowingly dumps hazardous waste in the landfill may be barred from using the landfill.

Should an incident where hazardous waste is found at the landfill occur, the event will be documented by landfill staff using the waste screening form provided in **Appendix B**.

Records of information gathered as part of the waste screening programs will be maintained at the landfill site during its active life and as long as required by Red Rock Disposal and DWM.

2.5 **WASTE DISPOSAL**

2.5.1 Access

The location of access roads during waste placement will be determined by operations personnel in order to reflect waste placement strategy.

2.5.2 General Procedures

Waste transportation vehicles will arrive at the working face at random intervals. There may be a number of vehicles unloading waste at the same time, while other vehicles are waiting. In order to maintain control over the unloading of waste, a certain number of vehicles will be allowed on the working face at a time. The actual number will be determined by the truck spotter. This procedure will be used in order to minimize the potential of unloading unacceptable waste and

to control disposal activity. Operations at the working face will be conducted in a manner which will encourage the efficient movement of transportation vehicles to and from the working face, and to expedite the unloading of waste.

The approach to the working face will be maintained such that two or more vehicles may safely unload side by side. A vehicle turn-around area large enough to enable vehicles to arrive and turn around safely with reasonable speed will be provided adjacent to the unloading area. The vehicles will back to a vacant area near the working face to unload. Upon completion of the unloading operation, the transportation vehicles will immediately leave the working face area. Personnel will direct traffic necessary to expedite safe movement of vehicles.

Waste unloading at the landfill will be controlled to prevent disposal in locations other than those specified by site management. Such control will also be used to confine the working face to a minimum width, yet allow safe and efficient operations. The width and length of the working face will be maintained as small as practical in order to maintain the appearance of the site, control windblown waste, and minimize the amount of cover required each day. Normally, only one working face will be active on any given day, with all deposited waste in other areas covered by either periodic or final cover, as appropriate.

The procedures for placement and compaction of solid waste include: unloading of vehicles, spreading of waste into 2 foot lifts, and compaction on relatively flat slopes (i.e. 5H:1V max.) using a minimum number of three full passes. The use of portable signs with directional arrows and portable traffic barricades will facilitate the unloading of wastes to the designated disposal locations. These signs and barricades will be placed along the access route to the working face of the landfill or other designated disposal areas which may be established.

2.5.3 Special Waste Management

2.5.3.1 Asbestos Management

Red Rock Disposal may dispose of regulated asbestos within the C&D landfill. Regulated asbestos-containing material (RACM) means:

- (a) Friable asbestos materials;
- (b) Category I nonfriable asbestos-containing material (ACM) that has become friable;
- (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; or
- (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on material in the course

of demolition or renovation operations regulated by this subpart.

Asbestos containing materials are further defined as:

- Category I nonfriable asbestos-containing material means asbestos containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one (1) percent asbestos as determined using the method specified in Appendix E, Subpart E, 40 CFR part 763, Section 1, Polarized Light Microscopy.
- Category II nonfriable ACM means any material, excluding Category I nonfriable ACM, containing more than one (1) percent asbestos as determined using the methods specified in Appendix E, Subpart E, 40 CFR part 763, Section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- Nonfriable asbestos-containing material means any material containing more than one (1) percent asbestos as determined using the method specified in Appendix E, Subpart E, 40 CFR part 763, Section 1, Polarized Light Microscopy, that, when dry cannot be crumbled, pulverized, or reduced to powder by hand pressure. *This material is non-regulated.*

Asbestos will only be accepted if it has been processed and packaged in accordance with State and Federal (40 CFR 61) regulations. Asbestos will arrive at the site in vehicles that contain only the asbestos waste and only after advance notification by the generator.

Once the hauler brings the asbestos to the landfill, the hauler will be directed to the designated asbestos disposal area by operations personnel. The designated disposal area will be prepared by operations personnel by leveling a small area using a dozer or loader. Prior to disposal, the landfill operators will stockpile cover soil near the designated asbestos disposal area. The volume of soil stockpiled will be sufficient to cover the waste and to provide any berms, etc. to maintain temporary separation from other landfill traffic.

Once placed in the prepared area, the asbestos waste will be covered with a minimum of 18 inches of daily cover soil placed in a single lift. The surface of the cover soil will be compacted and graded using a tracked dozer or loader. The landfill compactor will be prohibited from operating over asbestos disposal areas until at least 18 inches of cover are in-place.

The landfill staff will record the approximate location and elevation of the asbestos waste once cover is in-place. The Solid Waste Director will then

review pertinent disposal and location information to assure compliance with regulatory requirements and enter the information into the Operating Record.

Once disposal and recording for asbestos waste is completed, the disposal area may be covered with waste. No excavation into designated asbestos disposal areas will be permitted.

2.5.4 Periodic Cover

At the completion of waste placement each week or sooner, a 6 inch layer of earthen material will be placed over the exposed waste. This periodic cover is intended to control vectors, fire, odors, and blowing debris.

2.6 **SEVERE WEATHER CONDITIONS**

Unusual weather conditions can directly affect the operation of the landfill. Some of these weather conditions and recommended operational responses are as follows.

2.6.1 Ice Storms

An ice storm can make access to the landfill dangerous, prevent movement or placement of periodic cover, and, thus, may require closure of the landfill until the ice is removed or has melted.

2.6.2 Heavy Rains

Exposed soil surfaces can create a muddy situation in some portions of the landfill during rainy periods. The control of drainage and use of crushed stone on unpaved roads should provide all-weather access for the site and promote drainage away from critical areas. In areas where the aggregate surface is washed away or otherwise damaged, new aggregate should be used for repair.

Intense rains can affect newly constructed drainage structures such as swales, diversions, cover soils, and vegetation. After such a rain event, inspection by landfill personnel will be initiated and corrective measures taken to repair any damage found before the next rainfall.

2.6.3 Electrical Storms

The open area of a landfill is susceptible to the hazards of an electrical storm. If necessary, landfilling activities will be temporarily suspended during such an event. To guarantee the safety of all field personnel, refuge will be taken in the on-site buildings or in rubber-tired vehicles.

2.6.4 Windy Conditions

The proposed operational sequence minimizes the occurrence of unsheltered operations relative to prevailing winds. If this is not adequate during a particularly windy period, work will be temporarily shifted to a more sheltered area. When this is done, the previously exposed face will be immediately covered with daily cover. In addition, laborers will pick up wind-blown debris as needed after episodes of strong wind.

2.6.5 Violent Storm

In the event of hurricane, tornado, or severe winter storm warning issued by the National Weather Service, landfill operations may be temporarily suspended until the warning is lifted. Daily cover will be placed on exposed waste and buildings and equipment will be properly secured.

2.7 HEIGHT MONITORING

On a weekly basis, the landfill staff will monitor landfill top and side slope elevations. When such elevations approach the grades shown in the Facility Drawings (Phase 1 - Final Grading and Drainage Plan), the final top-of-waste grades will be staked to limit over-placement of waste.

3.0 RECYCLING AREA OPERATIONS

The facility's recycling and material recovery operation is intended to segregate co-mingled recyclable and/or reusable materials from the site's waste stream and temporarily store these materials within the permitted landfill footprint. The material recovery operation will take place within a portion of the site's active area and will therefore relocate from time to time along with the active area. Material recovery operations will only take place within the permitted waste limits (as shown on **Figure 2**). Temporary material storage (prior to the end use) may take place in adjacent areas where waste disposal has not yet begun, but still within the permitted limits of waste disposal.

As shown on **Figure 2**, there will be a 25-foot minimum buffer between the temporary fence or physical barrier around the recycling (sorting) area and the limit of disposal in the active area. Sorting will occur only on previously landfilled surfaces (i.e. within the constructed, active cells) that are contained within the facility's groundwater monitoring network.

The recyclable/reusable materials will generally be removed by hand, with the assistance of small equipment, as needed, placed into containers or stockpiles located in close proximity to the operation, processed, and either re-used on-site or sold. Recovered materials will not be stored speculatively. Remaining C&D wastes in the diverted loads will then be disposed in accordance with the site's C&D permit. The anticipated wastes to be recovered and their anticipated end uses include the following:

Table 3: Recyclable Materials

RECYCLED WASTE	GENERAL OPERATION	ANTICIPATED END USES
Corrugated Cardboard	Segregated by hand; and placed into closed (covered) roll-off box (not baled)	Sold off-site
Clean Wood Waste (no painted, stained, or otherwise contaminated wood)	Segregated with loader and/or excavator; metal separated (magnets); and placed into roll-off box or stockpiled; wood will be chipped and/or ground on-site or shipped off-site for grinding	Used for on-site mulching, erosion control, or sold off-site Removed metal will be sold off-site

Table 3: Recyclable Materials (continued)

RECYCLED WASTE	GENERAL OPERATION	ANTICIPATED END USES
Scrap Metals	Segregated by hand and/or equipment and placed into roll-off box	Removed metal sold off-site
Gypsum Wallboard	Segregated by hand and/or equipment and placed into roll-off box	Sold off-site
Clean Concrete	Segregated with loader and/or excavator; rebar separated (magnets); stockpiled on-site; crushed	Used for on-site road aggregate or sold off-site Removed metal sold off-site

3.1 Safety

The recycling area will generally be located contiguous to the active, operating C&D disposal face. The recycling area will be partitioned from the active C&D area with physical barriers (i.e. fencing, earthen materials, etc.) for safety and protection of site personnel who are segregating materials within the recycling area. All equipment operating in the recycling area will be equipped with back-up alarms. All appropriate Personal Protective Equipment will be worn by workers in the recycling area, including two-way radios between the workers and equipment operators.

Asbestos Containing Waste (ACW) or suspected ACW will not be hauled to, or dumped into, the sorting area. ACW will be buried in accordance with applicable North Carolina and NESHAP requirements.

3.2 Operations

Only those C&D waste loads delivered to the site that contain predominantly recoverable materials will be diverted to the recycling area for segregation handling. It is anticipated that up to 20% of the C&D waste stream (by weight) delivered to the site will be segregated, recovered, recycled and/or reused. Materials that are not recoverable, but which were dumped within the sorting area, will be pushed and/or loaded and hauled to the adjacent active area for proper disposal on a daily basis.

Containers will be stored within either the current or future landfill footprint such that they are within the facility's groundwater monitoring network. Future groundwater monitoring wells may be installed prior to their scheduled phasing

to accomplish this. Once the temporary storage containers are full, but not less frequently than annually, the materials will be processed as needed.

The landfill (intermediate) cover will be maintained at 12 inches in thickness in the recycling/sorting area. Additional material will be added as needed to maintain this buffer.

Wood waste will be stockpiled within future landfill footprint areas and will be periodically processed (chipped, shredded, etc.) immediately prior to being sold and hauled off site or just prior to use on site, as appropriate. No mulch will be stockpiled on site for more than 7 days. A 20-foot wide clear area will be maintained around wood waste stockpiles to allow access in the event of a fire.

3.3 Equipment

Anticipated equipment to be used in and around the recycling area will include:

- one small rubber-tired loader, skid-steer, or bobcat; and
- one small excavator.

Other equipment may be added as needed. Containers will generally consist of steel roll-off boxes, both covered and open, depending on the contents, and will be stored in proximity to the recycling operational area. Cardboard and wallboard containers will be covered. All containers will generally be removed from the site as they are filled.

3.4 Personnel

Based on permitted site tonnage, up to four (4) site personnel, including equipment operators, are anticipated for operations within the recycling area of the site.

3.5 Recovered Material Management

Only waste loads which are predominantly recyclable materials will be diverted to the sorting area. Recovered materials that are removed from the waste stream for re-use will be weighed on the site scales prior to being removed from the site at the time of their sale. If the materials are to be used on site (i.e., processed wood waste/mulch, crushed concrete, etc.), they will be weighed on the site scales prior to being used on site.

3.6 Recordkeeping

As a result of the recovered material management practices, there will be accurate records and reporting of the weight of waste and the weight of recycled/reused materials. The net weight of waste equals the total weight of material entering the site minus the weight of recovered materials removed from the waste stream.

4.0 ENVIRONMENTAL MANAGEMENT

4.1 OVERVIEW

This section reviews the overall environmental management tasks required for the successful operation of the C&D landfill.

4.2 EROSION AND SEDIMENTATION CONTROL

A separate erosion and sedimentation control plan is provided in the Erosion and Sedimentation Control Plan of the Permit Application. This plan describes the engineered features and practices for preventing erosion and controlling sedimentation at this site. The erosion and sediment control system consists of the following major components:

1. Drainage Channels
2. Diversion Berms (Side Slope Swales and Cap Diversion Berm)
3. Down Pipes
4. Sediment Basins/Traps.

The landfill side slopes are designed with 3H:1V slopes and diversion berms placed along the slope. The berms are designed to keep water volumes and velocities low enough to minimize erosion of the landfill cover. Maintenance of the cover system will involve periodic mowing and repair of any erosion problems and bare spots. These items will be inspected at least once a month and after any significant rainfall events.

The down pipes are designed to carry concentrated flows of surface water off of the landfill. The down pipes will be inspected at least once a month and after any significant rainfall event.

Additional erosion control measures have been taken within the drainage channels and at points of stormwater discharge. All final cover should be inspected regularly for erosion damage and promptly repaired.

Stormwater run-off from the C&D landfill is conveyed to sediment basins and traps. These structures should be inspected regularly for sediment build-up or erosion damage and should be cleaned out when sediments fill the lower half of each structure.

4.3 LANDFILL GAS CONTROL

A landfill gas control and monitoring plan has been prepared for the site and is presented in Landfill Gas Management Plan.

4.4 VECTOR CONTROL

Due to the nature of the waste disposed in this landfill, vector control is not expected to be of concern.

4.5 ODOR CONTROL

Due to the nature of the waste disposed in this landfill, odor is not expected to be of concern.

4.6 DUST CONTROL

Dust related to waste hauler traffic on the access roads will be minimized by using a water truck to limit dust on the gravel portion of the road. Dust generated by excavation of cover soil will be limited by watering the cut soil areas if accessible to the water truck.

4.7 INTERIM COVER

In addition to the occasional placement of the 6 inches of earthen material over the exposed waste, an additional 12 inches of earthen cover should be placed on all waste surfaces that have not received waste in 30 days but are below final elevation. This intermediate cover should be graded and seeded such that precipitation run-off is channeled to the stormwater collection system.

4.8 INTERIM COVER MONITORING

Routine inspections of the entire site will include monitoring the interim covers to ensure the adequacy of the vegetative protective cover and to identify potential erosion concerns. Corrective actions will be taken to address any identified areas of concern.

4.9 EVAPORATION SYSTEM

The Evaporation System (system) is used to control the level of leachate within the landfill. Leachate is collected in sumps at the base of the landfill and then pumped to a holding tank located on the top of the landfill. From the holding tank, leachate is pumped to spray heads located on top of the landfill. The spray heads will be situated at heights between sixteen (16) and thirty (30) feet above grade, and spaced sufficient distance apart that the spray coming from one head does not interact with the spray of another head. Spray heads will be situated such that the liquids exiting the head will fall within the footprint of the landfill. The system has a maximum flow rate of eight (8) gallons per minute (gpm) per spray head, and the flow rate shall be adjusted based on weather conditions and visual cues of the system. Adjustments to the system flow rate should be made in accordance with Operational Adjustments of Leachate Evaporation System. The

system SHALL NOT be operated if the temperature drops below forty (40) degrees Fahrenheit, or there is precipitation.

Table 4: Operational Adjustments of Leachate Evaporation System

Increase Flow Rate	Decrease Flow Rate	Don't Run System
<ul style="list-style-type: none">• Temperature Increases• Relative Humidity Decreases• Light to Medium Wind	<ul style="list-style-type: none">• Temperature Decreases• Relative Humidity Increases• Gusting Winds• Mist cloud visible 5 feet above ground	<ul style="list-style-type: none">• Temperature below 40°• Precipitation

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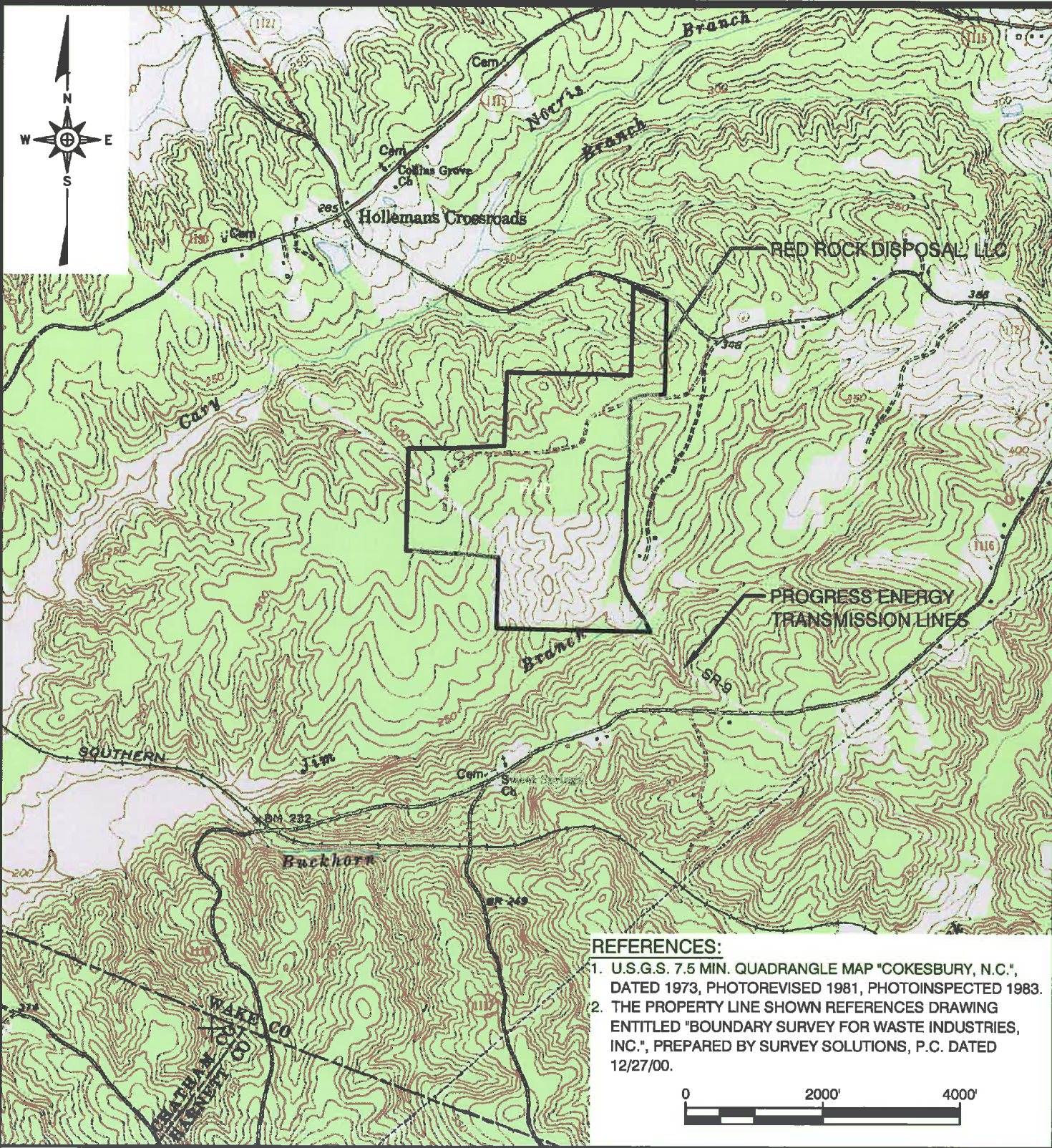
Figures 1

Site Location Map

**Operations Manual
Red Rock Disposal, LLC
NC Solid Waste Permit No. 92-28**

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- REFERENCES:**
- 1. U.S.G.S. 7.5 MIN. QUADRANGLE MAP "COKEBURY, N.C.", DATED 1973, PHOTOREVISED 1981, PHOTOINSPECTED 1983.
 - 2. THE PROPERTY LINE SHOWN REFERENCES DRAWING ENTITLED "BOUNDARY SURVEY FOR WASTE INDUSTRIES, INC.", PREPARED BY SURVEY SOLUTIONS, P.C. DATED 12/27/00.

PREPARED FOR:

RED ROCK DISPOSAL, LLC
SITE LOCATION MAP

PREPARED BY: _____ NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

DRAWN:	APPROVED:	SCALE:	DATE:	PROJECT NO.:	FIGURE NO.:	FILE NAME:
J.A.L.		AS SHOWN	Nov 2012	RED ROCK 12-2	1	REDROCK-A0119

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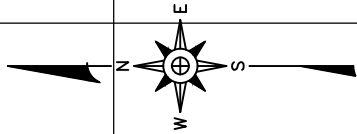
Figure 2

Landfill Facility Solid Waste Management Activities Map

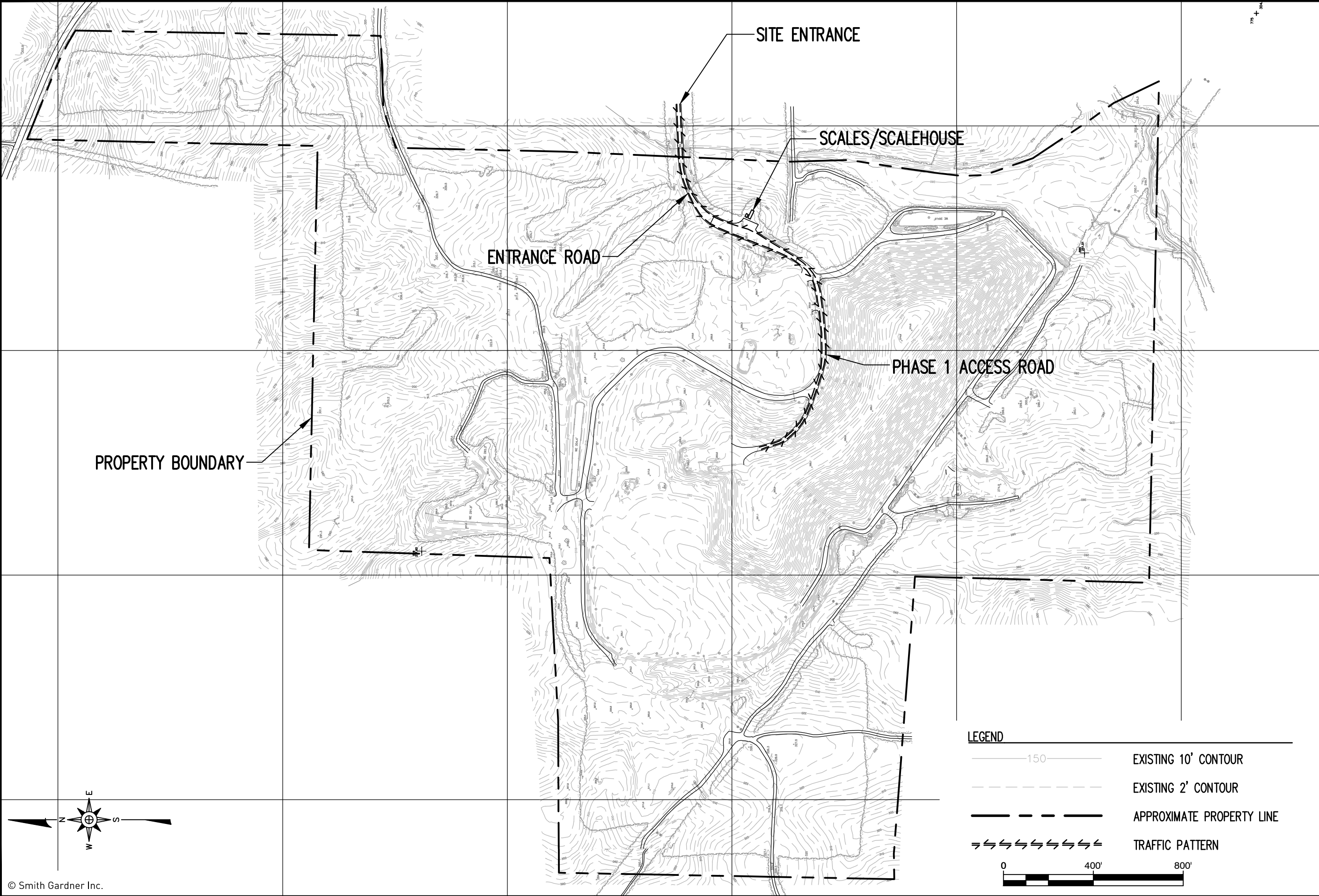
**Operations Manual
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RED ROCK DISPOSAL, LLC CGD LANDFILL TRAFFIC PLAN MAP	PREPARED FOR:					NC LIC. NO. C-0828 (ENGINEERING)		SMITH+GARDNER 14 N. Boylan Avenue, Raleigh NC 27603 919.928.0577
	DRAWN: J.A.L.		APPROVED:	SCALE: AS SHOWN	FIGURE NO. 2	PREPARED BY:		
	DATE: Nov 2012		PROJECT NO: RED ROCK 12-2	FILENAME: REDROCK-B0121				

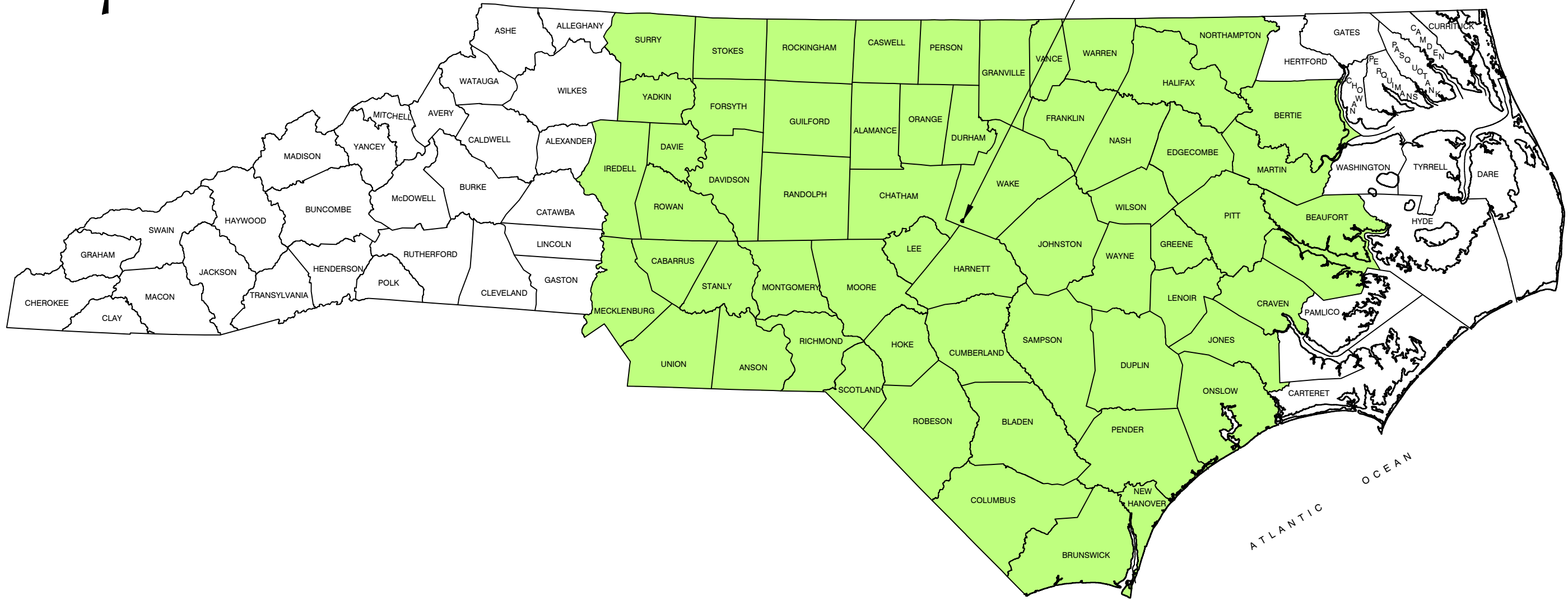
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Figure 3

Facility Service Area Map

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ATLANTIC OCEAN

PREPARED BY: _____ NC LIC. NO. C-0828 (ENGINEERING) _____

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577 _____

Nov 2012

PREPARED FOR:

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Appendix A

Fire Occurrence Notification Form

**Operations Manual
Red Rock Disposal, LLC
NC Solid Waste Permit No. 92-28**

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**SOLID WASTE MANAGEMENT FACILITY
FIRE OCCURRENCE NOTIFICATION
NC DENR Division of Waste Management
Solid Waste Section**



Notify the Section verbally within 24 hours and submit written notification within 15 days of the occurrence.
(If additional space is needed, use back of this form.)

NAME OF FACILITY: _____ PERMIT # _____

DATE AND TIME OF FIRE: _____ @ _____

HOW WAS THE FIRE REPORTED AND BY WHOM:

LIST ACTIONS TAKEN:

WHAT WAS THE CAUSE OF THE FIRE:

DESCRIBE AREA, TYPE, AND AMOUNT OF WASTE INVOLVED:

WHAT COULD HAVE BEEN DONE TO PREVENT THIS FIRE:

DESCRIBE PLAN OF ACTIONS TO PREVENT FUTURE INCIDENTS:

NAME: _____ TITLE: _____ DATE: _____

THIS SECTION TO BE COMPLETED BY SOLID WASTE SECTION REGIONAL STAFF

DATE RECEIVED _____

List any factors not listed that might have contributed to the fire or that might prevent occurrence of future fires:

FOLLOW-UP REQUIRED:

☐ NO ☐ PHONE CALL ☐ SUBMITTAL ☐ MEETING ☐ RETURN VISIT BY: _____ (DATE)

ACTIONS TAKEN OR REQUIRED:

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Appendix B

Waste Screening Form

**Operations Manual
Red Rock Disposal, LLC
NC Solid Waste Permit No. 92-28**

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Red Rock Disposal, LLC

Permit No. 92-28

WASTE SCREENING FORM

Day / Date: _____ Time Weighed in: _____
 Truck Owner: _____ Driver Name: _____
 Truck Type: _____ Vehicle ID / Tag No: _____
 Weight: _____ Tare: _____
 Waste Generator / Source: _____

Reason Load Inspected: Random Inspection _____ Staff Initials _____
 Detained at Scales _____ Staff Initials _____
 Detained by Operating Staff _____ Staff Initials _____

Inspection Location: _____

Approved Waste Determination Form Present? Yes _____ No _____ N/A _____

Description of Load: _____

Load Accepted (signature) _____ Date _____
 Load Not Accepted (signature) _____ Date _____

Reason Load Not Accepted (complete only if load not accepted)

Description of Suspicious Contents:

Color: _____ Hazardous Waste Markings: _____
 Texture: _____
 Drums Present: _____ Smell: _____
 Est. Cubic Yards in Load: _____
 Est. Tons in Load: _____

Wake County Emergency Management Contacted? Yes _____ No _____

Company or Authority Contacted? _____

Hazardous Materials Present: _____

Hauler Notified (if waste not accepted) _____ Phone: _____ Time Contacted: _____
 Other Observations: _____

Final Disposition

Signed: _____ Date _____

Waste Screening Inspector or Landfill Manager

Attach related correspondence to this form.

File completed form in Operating Record.

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Appendix C

Paint Filter Liquids Test EPA Method 9095

**Operations Manual
Red Rock Disposal, LLC
NC Solid Waste Permit No. 92-28**

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METHOD 9095 PAINT FILTER LIQUIDS TEST From EPA SW-846

5.0 SCOPE AND APPLICATION

1.1 This method is used to determine the presence of free liquids in a representative sample of waste.

1.2 The method is used to determine compliance with 40 CFR 264.314 and 265.314.

6.0 SUMMARY OF METHOD

2.1 A predetermined amount of material is placed in a paint filter. If any portion of the material passes through and drops from the filter within the 5 minute test period, the material is deemed to contain free liquids.

7.0 INTERFERENCES

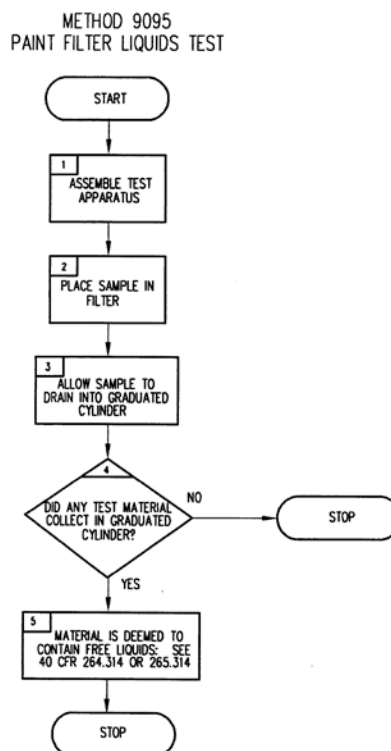
3.1 Filter media were observed to separate from the filter cone on exposure to alkaline materials. This development causes no problem if the sample is not disturbed.

8.0 APPARATUS AND

MATERIALS

4.1 Conical paint filter:
Mesh number 60 (fine meshed size). Available at local paint stores such as Sherwin-Williams and Glidden for an approximate cost of \$0.07 each.

4.2 Glass funnel: If the paint filter, with the waste, cannot sustain its weight on the ring stand, then a fluted glass



funnel or glass funnel with a mouth large enough to allow at least 1 inch of the filter mesh to protrude should be used to support the filter. The funnel is to be fluted or have a large open mouth in order to support the paint filter yet not interfere with the movement, to the graduated cylinder, of the liquid that passes through the filter mesh.

4.3 Ring stand and ring or tripod.

4.4 Graduated cylinder or beaker: 100-mL.

9.0 REAGENTS

5.1 None.

10.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 All samples must be collected according to the directions in Chapter Nine of EPA SW-846.

6.2 A 100 mL or 100 g representative sample is required for the test. If it is not possible to obtain a sample of 100 mL or 100 g that is sufficiently representative of the waste, the analyst may use larger size samples in multiples of 100 mL or 100 g, i.e., 200, 300, 400 mL or g. However, when larger samples are used, analysts shall divide the sample into 100-mL or 100-g portions and test each portion separately. If any portion contains free liquids, the entire sample is considered to have free liquids.

11.0 PROCEDURE

7.1 Assemble test apparatus as shown in **Figure 1**.

7.2 Place sample in the filter. A funnel may be used to provide support for the paint filter.

7.3 Allow sample to drain for 5 minutes into the graduated cylinder.

7.4 If any portion of the test material collects in the graduated cylinder in the 5-min. period, then the material is deemed to contain free liquids for purposes of 40 CFR 264.314 and 265.314.

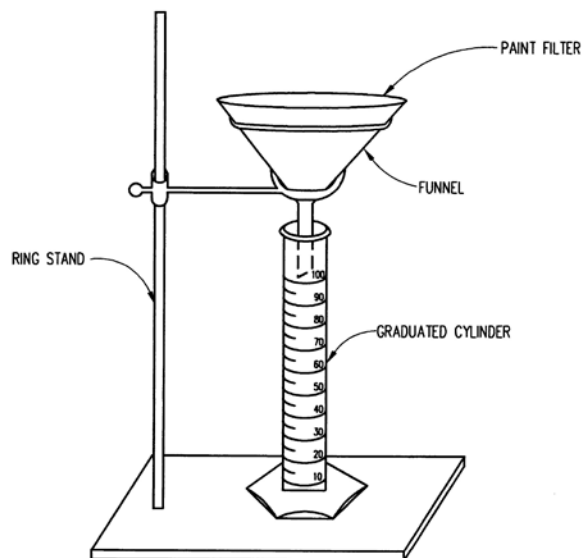


FIGURE 1. PAINT FILTER TEST APPARATUS.

12.0 QUALITY CONTROL

8.1 Duplicate samples should be analyzed on a routine basis.

13.0 METHOD PERFORMANCE

9.1 No data provided.

14.0 REFERENCES

10.1 None required.

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Certificate Of Completion

Envelope Number: A9FE7CFB245840E5B9751891F58D4D21	Status: Completed
Subject: Please DocuSign: Red Rock Ops Manual Update_Nov 2015_Complete.pdf	
Source Envelope:	
Document Pages: 60	Signatures: 2
Certificate Pages: 4	Initials: 0
AutoNav: Enabled	
Envelopeld Stamping: Enabled	
	Envelope Originator:
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	14 N. Boylan Ave
	Raleigh, NC 27603
	docusign@smithgardnerinc.com
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Status: Original	Holder: Smith Gardner, Inc.	Location: DocuSign
November 10, 2015 17:04 ET	docusign@smithgardnerinc.com	

Signer Events

Spencer Hollomon
 spencer@smithgardnerinc.com
 Security Level: Email, Account Authentication (None)

Signature

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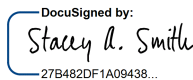
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 Signed: November 10, 2015 | 17:12 ET

Electronic Record and Signature Disclosure:
 Accepted: November 10, 2015 | 17:12 ET
 ID: 2676592d-8da4-43d8-ad3d-5a888de168b3

Stacey A. Smith
 stacey@smithgardnerinc.com
 President
 Security Level: Email, Account Authentication (None)

DocuSigned by:

 27B482DF1A09438...

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In Person Signer Events

Signature

Timestamp

Editor Delivery Events

Status

Timestamp

Agent Delivery Events

Status

Timestamp

Intermediary Delivery Events

Status

Timestamp

Certified Delivery Events

Status

Timestamp

Carbon Copy Events

Status

Timestamp

Notary Events

Timestamp

Envelope Summary Events

Status

Timestamps

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Signing Complete	Security Checked	November 10, 2015 17:47 ET
Completed	Security Checked	November 10, 2015 17:47 ET

Electronic Record and Signature Disclosure

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

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